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A general outline of the animal kingdom, and manual of comparative anatomy. By Thomas Rymer Jones. 8vo: pp. 732. London, 1841.

Figures and descriptions of the Palœozoic fossils of Cornwall, Devon, West Somerset, &c. By John Phillips, F.R.S. 8vo. London, 1841.

A communication from the American Philosophical Society was read, acknowledging the reception of the last No. of the Proceedings.

A letter was read from Mr. J. Tremper, dated Dresden, N. Y., Feb. 14, 1845, announcing that he had made a collection of fossils from the immediate vicinity of the Seneca Lake, intended for the cabinet of the Society, and which would be forwarded by the earliest opportunity. The letter also contained some meteorological observations which had been taken by the writer at the same locality during the past winter.

Prof. Johnson offered the following resolution, which was unanimously adopted:

Resolved, That the thanks of the Society be presented to Mr. William Hembel, for the valuable donation of scientific works this evening received from him.

Stated Meeting, March 11, 1845.

Vice President Morton in the Chair.

DONATIONS TO MUSEUM.

Mounted specimen of Ardea purpurea, and a specimen of Madrepora palmata, of unusual size. From Mr. Cassin.

A collection of plants made during a trip up the Mississippi and St. Peters, and over the Lakes in 1838. From Mrs. Rachel Blanding.

Specimen of a true concretionary Oolite rock; from the south of Florida. From Prof. H. D. Rogers.

A communication from Mr. Haldeman was read, dated Chiquesalunga, March 3d, 1845, suggesting to the Society an exchange of publications with the "Swiss General Association of Naturalists."

A paper by Dr. Hallowell, entitled "Descriptions of Reptiles from South America, supposed to be new;" and a second paper, entitled " Descriptions of new species of African Reptiles," were read and referred to the following committee, viz.: Dr. Blanding, Rev. Mr. McFarland, and Dr. Holbrook.

Professor Johnson made some remarks on a recent occurrence of the adhesion and apparently perfect cementation of two steel bars in the cold state, while revolving in contact with each other. The one, the upright shaft, bearing a heavy mill stone, and the other a cylinder of the same diameter, also standing vertical, and on the head of which the shaft was supported. Both bars were of the same diameter, (rather more than an inch) and their ends were planes running in contact. The mill being suddenly arrested and the two bars found strongly united, efforts to separate them proved ineffectual, and the attempt led to a fracture out of the original juncture.

This occurrence was stated to be in accordance with observavations already familiar to those who have studied the phenomena of cohesion, and particularly the habitudes of steel and iron, when subjected to mechanical motions tending to modify the condition of their ultimate molecules.

The simple pressing together at ordinary temperatures of two clean and plain surfaces of lead causes them to cohere with much tenacity. Two or more portions of the same metal at an elevated temperature, issuing under pressure from a reservoir of semifluid metal, may unite under simple pressure to form a continuous tube, so perfect, that it will part at any other section as soon as at the line of juncture. Two disks of glass, perfectly clean, and placed in contact without the intervention of air or of organic matter, cohere to an extent far beyond what the mere external pressure of the air would be adequate to produce.

Besides the tendency of similar materials to cohere when brought into close contiguity, the two bars had the farther advantage of developing in each other a very high degree of magnetism. This, their vertical position alone, without motion, being so near the direction of the magnetic dip, would certainly in time produce; and with the revolving motion, which (as every machinist knows from the operations of boring and drilling) produces a high magnetic state, it would occur with much greater promptitude and intensity.

It was represented that the juncture had not apparently been heated, at least not discoloured. This latter fact is perfectly consistent, however, with such a degree of temperature as would allow much mobility of particles, and greatly aid the high pressure of more than a ton weight per square inch, and a strong magnetic attraction to bring the revolving surfaces into the sphere of actual cohesion. The grease box with which the two bars are stated to have been surrounded would defend the surfaces from oxidation, the cause of discolouring, and would interpose no effectual preventive against the contact of two plain surfaces, revolving in the circumstances now supposed.

Professor Johnson referred to his own experiments, made many years ago, in which it was found that bars of iron broken at a temperature of 5 or 600 degrees, and in the magnetic meridian, became strongly and permanently magnetic. He referred to the proceedings of the Academy (vol. 1, page 144,) for an account of the phenomena then observed.

It is a subject of regret that the proprietors of the mill in question, had not preserved the united bars, to be submitted to competent persons for a minute examination of their condition and properties.

Prof. Henry D. Rogers stated that the specimen of Oolite rock presented by him this evening, had been obtained from Dr. Binney of Boston. It had been found in Florida, in a somewhat extensive deposit, by a correspondent of that gentleman. Though identical in colour and structure with the

Bath Oolite of England, its organic remains would seem to refer it to the latest tertiary period.

On motion of Dr. Bridges: Resolved, That the Committee of publication be authorised to transmit to the "Swiss General Association of Naturalists," an entire set of the Journal of the Academy, and a copy of the Proceedings as far as published.

Stated Meeting, March 18th, 1845.

VICE PRESIDENT MORTON in the Chair.

DONATIONS TO LIBRARY.

Observations on the Botany of Illinois, more especially in reference to the autumnal flora of the Prairies. By C. W Short. (From the Western Journal of Medicine and Surgery. Vol. 3, No. 3, new series.) From the Author.

Discourse on the 200th anniversary of the birth of William Penn. Delivered in Independence Hall, Oct. 24, 1844, before the Historical Society of Pennsylvania, by Job R. Tyson. From the Author.

Journal of Prison Discipline and Philanthropy. Vol. 1, No. 1. Jan., 1845. From the Philadelphia Society for alleviating the miseries of prisons.

A letter was read from the Rev. Daniel Zeigler, dated York, Pa., March 10, 1845, acknowledging the receipt of his notice of election as a Correspondent.

On motion of Prof. Johnson: Resolved, That a copy of the Proceedings of the Academy, as far as published, be presented to the Historical Society of Pennsylvania.